

## SUPPLEMENTAL MATERIAL

### **Associations between Fine and Coarse Particles and Mortality in Mediterranean Cities: Results from the MED-PARTICLES Project**

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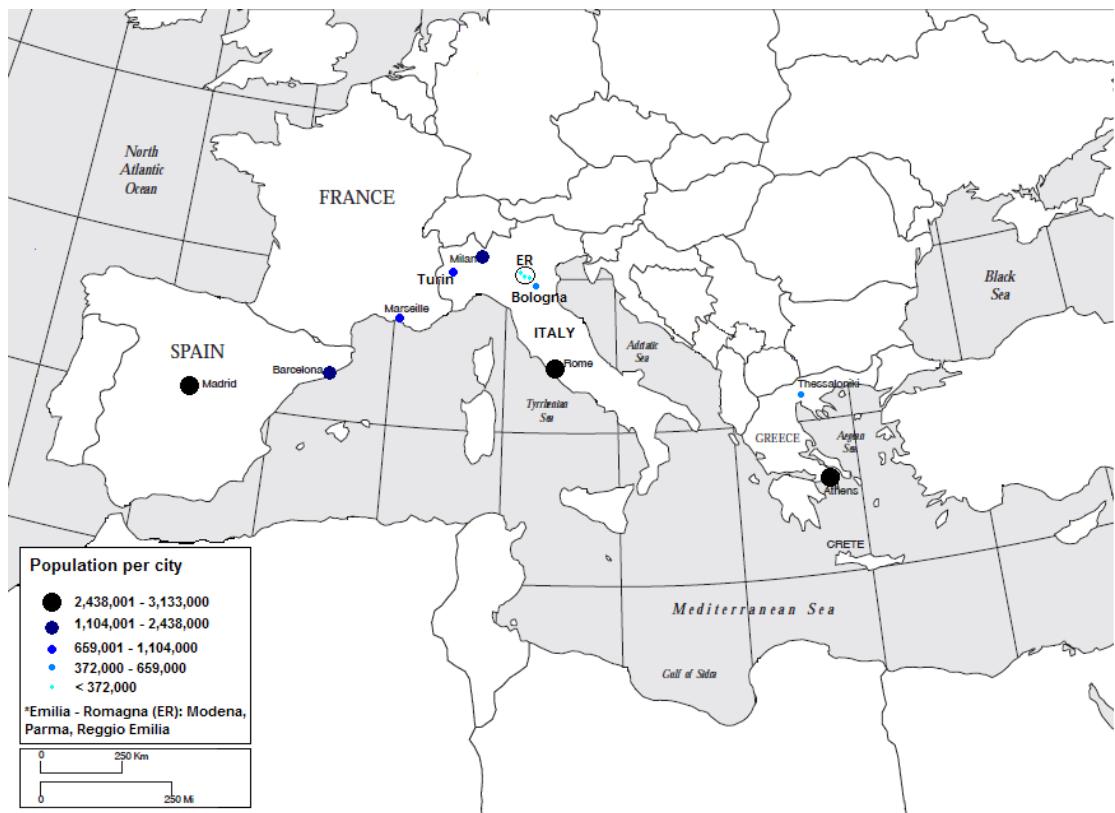
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**Supplemental Material, Figure S1.** Map of participating metropolitan areas in MED-PARTICLES Project.

**Supplemental Material, Table S1.** Correlations between PM<sub>2.5</sub> and the other pollutants according to metropolitan area.

City	PM <sub>2.5</sub> -PM <sub>2.5-10</sub>	PM <sub>2.5</sub> -NO <sub>2</sub>	PM <sub>2.5</sub> -SO <sub>2</sub>	PM <sub>2.5</sub> -O <sub>3</sub>
Athens	0.33	0.41	0.18	0.33
Barcelona	0.19	0.33	0.25	-0.10
Bologna	-	0.71	-	-0.50
ER	0.50	0.69	-	-0.50
Madrid	0.65	0.62	0.17	-0.27
Marseille	0.20	0.69	0.31	-0.03
Milan	0.41	0.76	-	-0.65
Rome	0.33	0.67	0.42	-0.26
Thess/ki	0.68	0.55	-	-0.19
Turin	-	0.72	0.60	-0.63

**Supplemental Material, Table S2.**  $I^2$  values and p-values for  $X^2$  tests for heterogeneity in the associations between mortality and particles.

Association under investigation	Lag 0-1		Lag 2-5		Lag 0-5	
	$I^2$	p	$I^2$	p	$I^2$	p
<b>All-cause mortality</b>						
<b>PM<sub>2.5</sub></b>	0	0.59	29	0.18	17	0.28
<b>PM<sub>2.5-10</sub></b>	25	0.23	59	0.02	61	0.01
<b>PM<sub>10</sub></b>	0	0.53	55	0.02	52	0.03
<b>Cardiovascular mortality</b>						
<b>PM<sub>2.5</sub></b>	11	0.34	0	0.49	6	0.39
<b>PM<sub>2.5-10</sub></b>	0	0.95	16	0.30	15	0.31
<b>PM<sub>10</sub></b>	0	0.54	0	0.69	0	0.58
<b>Respiratory mortality</b>						
<b>PM<sub>2.5</sub></b>	0	0.52	0	0.43	0	0.61
<b>PM<sub>2.5-10</sub></b>	27	0.22	0	0.56	11	0.35
<b>PM<sub>10</sub></b>	0	0.95	27	0.20	0	0.51

**Supplemental Material, Table S3.** City-specific precent increase (and 95% confidence intervals (CIs)) in mortality associated with a 10- $\mu\text{g}/\text{m}^3$  increase in fine and coarse particles, for the selected lag structure per association.<sup>a</sup>

City	PM <sub>2.5</sub>			PM <sub>2.5-10</sub>		
	Total mortality lag 0-1	Cardiovascular mortality lag 0-5	Respiratory mortality lag 0-5	Total mortality lag 0-1	Cardiovascular mortality lag 0-5	Respiratory mortality lag 0-5
Athens	1.20 (0.16, 2.25)	2.97 (0.85, 5.14)	3.32 (-0.66, 7.46)	0.15 (-0.51, 0.82)	-0.26 (-1.73, 1.23)	0.44 (-2.22, 3.17)
Barcelona	0.89 (0.11, 1.68)	0.81 (-1.12, 2.78)	3.42 (0.13, 6.82)	0.55 (-0.35, 1.46)	1.41 (-0.89, 3.77)	2.22 (-1.69, 6.30)
Bologna	0.32 (-0.81, 1.47)	-0.38 (-3.04, 2.35)	0.23 (-5.07, 5.84)	.	.	.
Emilia-Romagna	0.35 (-1.20, 1.94)	3.71 (0.35, 7.18)	5.28 (-3.08, 14.36)	1.33 (-2.05, 4.83)	8.58 (1.39, 16.28)	10.62 (-6.86, 31.39)
Madrid	0.98 (-0.45, 2.43)	0.31 (-3.13, 3.88)	0.92 (-3.59, 5.63)	-1.05 (-2.25, 0.16)	0.86 (-3.81, 2.18)	-3.21 (-6.95, 0.69)
Marseille	-0.95 (-2.39, 0.50)	0.28 (-3.43, 4.14)	-0.97 (-9.12, 7.91)	-0.83 (-3.37, 1.78)	0.86 (-5.79, 7.99)	-4.83 (-18.71, 11.42)
Milan	0.58 (0.06, 1.10)	0.68 (-0.65, 2.04)	2.42 (-0.36, 5.27)	0.98 (-0.13, 2.09)	0.45 (-2.55, 3.54)	2.56 (-3.68, 9.21)
Rome	0.21 (-0.69, 1.13)	1.03 (-0.94, 3.05)	6.49 (1.41, 11.83)	1.36 (-0.01, 2.74)	0.72 (-2.31, 3.84)	1.50 (-6.07, 9.67)
Thessaloniki	0.59 (-1.15, 2.36)	-1.09 (-4.77, 2.72)	0.39 (-7.82, 9.32)	-0.06 (-2.21, 2.14)	-2.12 (-6.74, 2.73)	-3.31 (-13.49, 8.06)
Turin	0.52 (-0.15, 1.19)	0.14 (-1.38, 1.68)	0.16 (-3.27, 3.72)	.	.	.

<sup>a</sup>Results from Poisson models adjusted for seasonality, temperature, day of the week, holidays, influenza and summer population decrease.

**Supplemental Material, Table S4.** Results from threshold models for all-cause mortality. Mean deviance and pooled percent increase (and 95% confidence intervals (CIs)) in mortality for a 10- $\mu\text{g}/\text{m}^3$  increase in the average of lags 0-1 exposures in PM<sub>2.5</sub> and PM<sub>2.5-10</sub>.<sup>a</sup>

Threshold at	PM <sub>2.5</sub>		PM <sub>2.5-10</sub>	
	Deviance	% (95%CI)	Deviance	% (95%CI)
0 $\mu\text{g}/\text{m}^3$	1563.55	0.53 (0.24, 0.82)	1333.45	0.31 (-0.23, 0.86)
5 $\mu\text{g}/\text{m}^3$	1563.55	0.53 (0.24, 0.82)	1333.49	0.30 (-0.25, 0.85)
10 $\mu\text{g}/\text{m}^3$	1563.57	0.53 (0.24, 0.82)	1333.53	0.28 (-0.29, 0.85)
15 $\mu\text{g}/\text{m}^3$	1563.67	0.53 (0.22, 0.83)	1333.66	0.31 (-0.26, 0.89)
20 $\mu\text{g}/\text{m}^3$	1563.93	0.50 (0.18, 0.82)	133.53	0.34 (-0.032, 1.01)
25 $\mu\text{g}/\text{m}^3$	1564.43	0.44 (0.09, 0.79)	-	-
30 $\mu\text{g}/\text{m}^3$	1564.81	0.37 (-0.01, 0.75)	-	-
35 $\mu\text{g}/\text{m}^3$	1564.85	0.32 (-0.09, 0.74)	-	-

<sup>a</sup>Results from second stage random-effects models pooling estimates from city-specific Poisson models adjusted for seasonality, temperature, day of the week, holidays, influenza and summer population decrease.